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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,367	06/23/2003	Jec Sung Lee	2336-175	9830

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EXAMINER

LESPERANCE, JEAN E

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/600,367	<b>Applicant(s)</b> LEE, JEE SUNG	
	<b>Examiner</b> Jean E. Lesperance	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on June 23, 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 is/are allowed.
- 6) ☒ Claim(s) 1 and 8 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 9-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/23/03, 10/08/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. Claims 1 to 17 are presented for examination.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being unpatentable over US Patent # 6,538,595 ("Tucker et al.").

Tucker et al. teach a method for transmitting keyboard data between a computer and a wireless keyboard having a plurality of general keys and a number of function keys (an IR keyboard Fig.1B (100) having a number of alphanumeric keys and a Keyboard matrix (123) and the processor 112 analyzes the received signal and, depending upon which horizontal line and which vertical line are indicated by the button press, determines which function or key has been pressed (column 3, lines 41-60), comprising the steps of:

(a) generating the keyboard data in response to a key press or press release (the processor 112 analyzes the received signal and, depending upon which horizontal line

Art Unit: 2629

and which vertical line are indicated by the button press, determines which function or key has been pressed (column 3, lines 57-60), the keyboard data including fixed data containing a leader indicating a transmission of the keyboard data, variable data, and inverted variable data, the variable data including a 1-bit special bit indicating whether a function key has been pressed, a make/brake bit indicating whether a key has been pressed, and a scan code corresponding to a pressed or press-released key (Header 301 consists of 3.38 milliseconds (ms), which is equivalent to 192 periods, of IR modulation, followed by 3.38 ms of no modulation. The primary purpose of the header pulse is to set up the IR receiver's (FIG. 2) automatic gain control. Data word 308 includes custom code 302 and data code 304. The values of the custom code 302 and data code 304 are determined based upon the detected key press and are illustrated in Appendix A. Each key includes both a custom code and a data code. The five bit custom code 302 and the six bit data code 304 are used to identify the key selected from the keyboard. Data word 308 also includes the transmission of a complemented custom code 306 and a complemented data code 307. After the custom code 302 and data code 304 are sent, the keyboard transmits the complemented, or inverse, custom code 306 and the complemented, or inverse, data code 307. A data frame is considered valid if the exclusive or of the non-inverted bits and inverted bits are all ones. Any command that passes the exclusive or test is considered valid and is sent to the processor 112 (FIG. 1B). The processor 112 interacts with the key library 125 and the key determination logic 130 (FIG. 2) to determine the proper code to send. The data

Art Unit: 2629

frame is then transmitted by the IR keyboard to the IR receiver in packets. (column 5, lines 4-27); and

(b) transmitting the generated keyboard data through an air interface (a wireless IR keyboard as described above, and similar to the wireless IR remote control described above, each time a keyboard key is pressed a digital code corresponding to the pressed key is generated, modulated onto an RF IR carrier, and transmitted to the special setup box. The setup box receives the RF IR signal, decodes the signal and determines which key was pressed (column 1, line 66 to column 2, line 5) where inherently wireless is air interface.

Regarding claim 8, Tucker et al. teach a method for receiving keyboard data between a computer and a wireless keyboard having a plurality of general keys and a number of function keys (An infrared (IR) keyboard having a communication protocol and a method for operating same includes circuitry for converting a standard recognized keystroke into a corresponding IR data word for transmission to an IR receiver (abstract) where the wireless keyboard includes a number of alphanumeric keys and a Keyboard matrix (123) and the processor 112 analyzes the received signal and, depending upon which horizontal line and which vertical line are indicated by the button press, determines which function or key has been pressed (column 3, lines 41-60) comprising the steps of:

(a) receiving and processing the keyboard data, the keyboard data including fixed data containing a leader indicating a transmission of the keyboard data, variable data, and inverted variable data, the variable data including a 1-bit special bit indicating

Art Unit: 2629

whether a function key has been pressed, a make/break bit indicating whether a key has been pressed, and a scan code corresponding to a pressed or press-released key (Header 301 consists of 3.38 milliseconds (ms), which is equivalent to 192 periods, of IR modulation, followed by 3.38 ms of no modulation. The primary purpose of the header pulse is to set up the IR receiver's (FIG. 2) automatic gain control. Data word 308 includes custom code 302 and data code 304. The values of the custom code 302 and data code 304 are determined based upon the detected key press and are illustrated in Appendix A. Each key includes both a custom code and a data code. The five bit custom code 302 and the six bit data code 304 are used to identify the key selected from the keyboard. Data word 308 also includes the transmission of a complemented custom code 306 and a complemented data code 307. After the custom code 302 and data code 304 are sent, the keyboard transmits the complemented, or inverse, custom code 306 and the complemented, or inverse, data code 307. A data frame is considered valid if the exclusive or of the non-inverted bits and inverted bits are all ones. Any command that passes the exclusive or test is considered valid and is sent to the processor 112 (FIG. 1B). The processor 112 interacts with the key library 125 and the key determination logic 130 (FIG. 2) to determine the proper code to send. The data frame is then transmitted by the IR keyboard to the IR receiver in packets (column 5, lines 4-27); and

(b) performing an operation corresponding to the received and processed keyboard data (key press event 352 is communicated by the IR keyboard to a receiver by sending the IR code corresponding to the appropriate custom code and data code

(column 5, lines 41-44)).

***Allowable Subject Matter***

3. Claims 2-7 and 9-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claim 17 is allowed.

5. The following is an examiner's statement of reasons for allowance: the claimed invention is directed to a method for transmitting and receiving keyboard data between a computer and a wireless keyboard having a plurality of general keys and a number of function keys.

Independent claim 17 identifies a uniquely distinct feature "receiving the keyboard data including the first to third bytes through an air interface, checking a transmission error on the basis of data of the second and third bytes, determining whether a key is in a make/brake mode on the basis of the make/brake bit contained in the second byte, determining whether the key is a function key on the basis of the special bit contained in the first byte if the key is in the make mode, and setting the special bit to generate a make code if the key is the function key, determining whether the key is the function key if the key is in the brake mode, and clearing the special bit to generate a brake code if the key is not the function key, and performing a corresponding operation according to the special bit, make/brake code and scan code".

**Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:00AM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks Washington, D.C. 20231

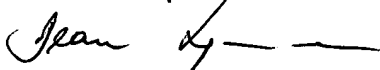
**or faxed to:**

(571) 273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park 11, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance



Date 5/26/2006

Art Unit 2629



**RICHARD HJERPE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**